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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/056,278	01/23/2002	Tao Chen	000457	8553
23696	7590	10/15/2004	EXAMINER	
Qualcomm Incorporated Patents Department 5775 Morehouse Drive San Diego, CA 92121-1714			YUN, EUGENE	
			ART UNIT	PAPER NUMBER
			2682	

DATE MAILED: 10/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/056,278	CHEN ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Eugene Yun	2682	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. ____.  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date ____.   | 6) <input type="checkbox"/> Other: ____.                                    |

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2. Claims 1, 3, 6-8, 13, 19, 20, 22, 26 and 27 are rejected under 35 U.S.C. 102(e) as being anticipated by Mallory (US 6,335,933).

Referring to Claim 1, Mallory teaches a method in a wireless communication system for selectively combining a plurality of received transmissions from respective signal sources (see col. 2, lines 62-67) to recover a message comprised of a plurality of frames, the method comprising:

Processing each of the plurality of transmissions separately to receive the message (see fig. 10 where the block diagram represents one processed transmission

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and the process repeats causing a plurality of processed transmissions. Also see fig. 13 where resent frames, such as frames 3 and 4 show a plurality of processed transmissions); and

If the message cannot be recovered error-free from a single transmission,

Determining erased frames in a message recovered from a first transmission (see col. 3, lines 1-5 and fig. 13 where frames 3 and 4 represent the erased frames),

Determining good frames recovered from remaining ones of the plurality of transmissions (see col. 2, lines 64-67 and fig. 13 where frames 1, 2, 5, and 6 in the "MULTIPLE LOST FRAMES" diagram represent the good frames),

Forming at least one combined message, wherein each combined message includes a particular combination of good frames substituting for the erased frames (see col. 3, lines 5-10 and fig. 13 where frames 3 and 4 get replaced to form a combined message with all good frames), and

Checking each combined message to determine whether it is good or erased (see col. 3, lines 5-10 and fig. 13 where after all erased frames get replaced with good frames, the message is determined to be good).

Claims 19, 26, and 27 have similar limitations as Claim 1.

Referring to Claim 3, Mallory also teaches checking each frame in the message recovered from the first transmission and marking each frame failing the checking as an erased frame (see fig. 13).

Referring to Claim 6, Mallory also teaches identifying each erased frame in the message recovered from the first transmission, identifying a good frame from one of the

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plurality of transmissions corresponding to each erased frame and substituting each erased frame with the corresponding good frame to form the combined message (see figs. 12 and 13).

Referring to Claim 7, Mallory also teaches the good frame corresponding to each erased frame identified based on a frame number associated with each frame (see fig. 13).

Referring to Claim 8, Mallory also teaches identifying a plurality of combinations of good frames for the erased frames in the message recovered from the first transmission and substituting each combination of good frames for the erased frames to form a respective combined message (see fig. 13).

Referring to Claim 13, Mallory also teaches each transmission from a respective signal source (see ABSTRACT).

Referring to Claim 20, Mallory also teaches a frame buffer to store good frames recovered from the plurality of symbol streams (see col. 2, lines 66-67).

Referring to Claim 22, Mallory also teaches a symbol buffer to store symbols corresponding to each erased frame in the message recovered from the first symbol system (see col. 2, lines 66-67).

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 2, 9-12, 14-17, 21, 24 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mallory in view of Keskitalo (US 5,920,553).

Referring to Claim 2, Mallory does not teach the first transmission having the highest signal quality among the plurality of transmissions. Keskitalo also teaches the first transmission having the highest signal quality among the plurality of transmissions (see col. 5, lines 41-44). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the teachings of Keskitalo to said device of Mallory in order to ensure the complete message transmission in shorter time.

Referring to Claim 9 and 21, Keskitalo also teaches combining symbols for two or more frames from two or more transmissions corresponding to the erased frame and decoding the combined symbols to derive a good frame for the erased frame (see col. 5, lines 45-53).

Referring to Claim 10, Keskitalo also teaches ranking the plurality of transmissions and wherein symbols for frames corresponding to the erased frames are combined in a particular order determined based on the ranking of the plurality of transmissions (see col. 5, lines 41-44).

Referring to Claim 11, Keskitalo also teaches the plurality of transmissions ranked based on signal quality (see col. 5, lines 41-44).

Referring to Claim 12, Keskitalo also teaches weighting symbols for each of the two or more frames corresponding to the erased frame based on a respective weight determined based on the signal quality of the two or more transmissions from which the

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two or more frames are recovered and wherein the weighted symbols are combined (see col. 5, lines 41-44).

Referring to Claim 14 and 25, Keskitalo also teaches each transmission a forward link signal from a respective base station in a CDMA system (see ABSTRACT).

Referring to Claim 15, Keskitalo also teaches the plurality of received transmissions are approximately synchronous (see col. 4, lines 66-67 and col. 5, lines 1-2).

Referring to Claim 16, Keskitalo also teaches the plurality of received transmissions are approximately asynchronous (see col. 4, lines 66-67 and col. 5, lines 1-2).

Referring to Claim 17 and 24, Keskitalo also teaches the message to be recovered error-free as a page message (see col. 3, lines 49-51).

5. Claims 4, 5, 18 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mallory in view of Alanara (US 6,286,122).

Referring to Claim 18, Mallory teaches a method in a CDMA communication system for selectively combining a plurality of non-synchronous forward link transmissions from respective signal sources (see col. 2, lines 62-67) to recover a page message comprised of a plurality of frames, the method comprising:

Processing each of the plurality of transmissions separately to recover the page message (see fig. 10 where the block diagram represents one processed transmission and the process repeats causing a plurality of processed transmissions. Also see fig. 13

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where resent frames, such as frames 3 and 4 show a plurality of processed transmissions); and

If the page message cannot be recovered error-free from a single transmission,

Determining erased frames in a message recovered from a first transmission (see col. 3, lines 1-5 and fig. 13 where frames 3 and 4 represent the erased frames),

Determining good frames recovered from remaining ones of the plurality of transmissions (see col. 2, lines 64-67 and fig. 13 where frames 1, 2, 5, and 6 in the "MULTIPLE LOST FRAMES" diagram represent the good frames),

Forming a combined message, by substituting each erased frame with a corresponding good frame (see col. 3, lines 5-10 and fig. 13 where frames 3 and 4 get replaced to form a combined message with all good frames), and

Checking each combined message to determine whether it is good or erased (see col. 3, lines 5-10 and fig. 13 where after all erased frames get replaced with good frames, the message is determined to be good).

Mallory does not teach each frame and each message checked based on a set of cycle redundancy check bits generated. Alanara teaches each frame and each message checked based on a set of cycle redundancy check bits generated (see ABSTRACT). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the teachings of Alanara to said device of Mallory in order to better prevent fading while receiving signals to form a message.

Referring to Claims 4, 5, and 23, Mallory does not teach each frame and each message checked based on a set of cycle redundancy check bits generated. Alanara



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teaches each frame and each message checked based on a set of cycle redundancy check bits generated (see ABSTRACT and fig. 3D where CRC bits are included to each frame). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the teachings of Alanara to said device of Mallory in order to better prevent fading while receiving signals to form a message.

### ***Response to Arguments***

6. Applicant's arguments filed 6/21/2004 have been fully considered but they are not persuasive.

The applicant argues that the Mallory reference does not teach "selectively combining a plurality of received transmissions from respective signal sources" pointing out that the Mallory reference only teaches a single source. The wording of the claim is not specific enough to rule out a single source. That limitation can be read on to mean one of several signal sources. That part of the claim needs to be more specific and read "a plurality of respective signal sources".

The examiner reads on the limitation of "plurality of transmissions" similarly as saying a plurality of frames. To the examiner, each frame transmission is a single transmission. Therefore, since every transmission contains one frame, fig. 10 demonstrates "processing a plurality of transmissions separately to recover a message".

The examiner does not see any specific detail in the remainder of the claim to read anything else other than keeping good frames and replacing bad frames with good frames which are retransmitted and repeating the process until the combined message

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comprises all good frames, all of which is taught in the Mallory reference. The claims also do not state that good frames are disposed of in any way. Therefore, the examiner reads on the limitation of "determining good frames recovered from a remaining one of a plurality of transmissions" as stating that the good frames are simply held on to or kept while the bad frames are disposed of. The Mallory reference clearly teaches the limitation of a "combined message with the combination of good frames substituting for the erased frames" as fig. 13 shows that any frame that is lost is erased and replaced with a good frame soon after.

The repeated process in figs. 10 and 13 the Mallory reference shows the limitation of "checking each combined message to determine whether it is good or erased" since the process in the Mallory reference repeats until every frame is transmitted and every bad frame is replaced with a good frame.

Regarding Claim 18, The Alanara reference is combined with the Mallory reference to show that transmitted frames and messages which include CRC bits are taught in the art.

### ***Conclusion***

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not


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mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eugene Yun whose telephone number is (703) 305-2689. The examiner can normally be reached on 8:30am-5:30pm Alt. Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian Chin can be reached on (703) 308-6739. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Eugene Yun  
Examiner  
Art Unit 2682

EY

  
LEE NGUYEN  
PRIMARY EXAMINER